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As-Filed New Application

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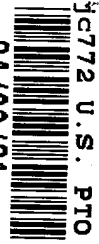
Transmittal



Level - 2
Version 1.1

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April 23, 2001

BOX PATENT APPLICATION
Commissioner for Patents
Washington, D.C. 20231

Re: Application of Takashi SHOJI
IMAGE INFORMATION READ-OUT APPARATUS
Our Ref. Q61188

Dear Sir:

Attached hereto is the application identified above including forty-seven (47) sheets of the specification, including the claims and abstract, eight (8) sheets of drawings, one (1) priority document, executed Assignment and PTO 1595 form, and executed Declaration and Power of Attorney. Also enclosed is the Information Disclosure Statement, along with the cited references.

The Government filing fee is calculated as follows:

Total claims	27	-	20	=	7	x	\$18.00	=	\$126.00
Independent claims	5	-	3	=	2	x	\$80.00	=	\$160.00
Base Fee									\$710.00
TOTAL FILING FEE									\$996.00
Recordation of Assignment									\$40.00
TOTAL FEE									\$1036.00

Checks for the statutory filing fee of \$996.00 and Assignment recordation fee of \$40.00 are attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 and any petitions for extension of time under 37 C.F.R. § 1.136 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from April 24, 2000 based on JP Application No. 122766/2000. The priority document is enclosed herewith.

Respectfully submitted,
SUGHRUE, MION, ZINN,
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UNITED STATES PATENT AND TRADEMARK OFFICE
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Specification

4

Level - 2
Version 1.1

Patented September 2, 2003

IMAGE INFORMATION READ-OUT APPARATUS

BACKGROUND OF THE INVENTION

Field of the Invention

5 This invention relates to an image information read-out apparatus which reads out image information from a recording medium by scanning the recording medium with reading light, and more particularly to an image information read-out apparatus in which the reading light is in the form of a line beam.

Description of the Related Art

10 An image information read-out apparatus which reads out image information from a recording medium by scanning the recording medium with a reading light beam has been used in a facsimile, a copier, a radiation image recording and read-out
15 apparatus and the like. For example, in the field of medical radiography, there has been known a method in which an electrostatic recording medium such as plates or sheets having a photoconductive layer sensitive to radiations such as X-rays (e.g., a selenium plate) is used as an image recording medium,
20 the electrostatic recording medium is exposed to X-rays passing through an object to store a latent radiation image of the object as latent image charges accumulated in respective parts of the recording medium according to the amount of X-rays impinging upon the parts, and the electrostatic recording medium is scanned
25 with a reading light beam to read out the latent radiation image stored thereon. For example, see our Japanese Patent

Application Nos. 10(1998)-232824, 10(1998)-271374 and 11(1999)-87922.

When certain kinds of phosphors are exposed to a radiation such as X-rays, α -rays, β -rays, γ -rays, cathode rays or ultraviolet rays, they store a part of the radiation. Then when the phosphor which has been exposed to the radiation is exposed to stimulating rays such as visible light, light is emitted from the phosphor in proportion to the stored energy of the radiation. A phosphor exhibiting such properties is generally referred to as "a stimuable phosphor". A radiation image recording and read-out apparatus using a sheet having a layer of stimuable phosphor (generally referred to as a "stimuable phosphor sheet") has been put into practice. In the radiation image recording and read-out apparatus, the stimuable phosphor sheet is first exposed to a radiation passing through an object and stores a radiation image of the object and the stimuable phosphor sheet is scanned with a reading light beam (a stimulating light beam) and light emitted from the stimuable phosphor upon exposure to the stimulating light beam is detected to read out the radiation image of the object. In this specification, the light emitted from the stimuable phosphor upon exposure to the stimulating light will be referred to as "stimulated emission".

In the image information read-out apparatus where an image recorded on a recording medium (e.g., an electrostatic recording medium, a stimuable phosphor sheet and the like) is read out

by exposing the recording medium to reading light, the recording medium is often exposed to the reading light by sweeping a line reading light beam emitted from a line light source such as an LED array or an LD array in a direction intersecting the direction of the line reading light beam.

When the image information read-out apparatus is for medical radiography, the recording/read-out unit carrying thereon a recording medium and a line reading light source must be moved according to the height of the object, a picture taking angle and/or the like. Accordingly, the image information read-out apparatus is sometimes provided with a recording/read-out unit moving means.

However, when the recording/read-out unit moving means moves the recording/read-out unit while the line reading light source is scanning the recording medium with a line reading light beam, a certain physical force sometimes acts on the line reading light source in the direction of scanning of the line reading light beam. As a result, the reading light beam scanning speed of the line reading light source fluctuates and the reading light beam can impinge upon the recording medium in wrong positions, which can result in generation of artifact in the image information read out.

SUMMARY OF THE INVENTION

In view of the foregoing observations and description, the primary object of the present invention is to provide an image information read-out apparatus having a read-out means